# Munitions Insights/Initiatives


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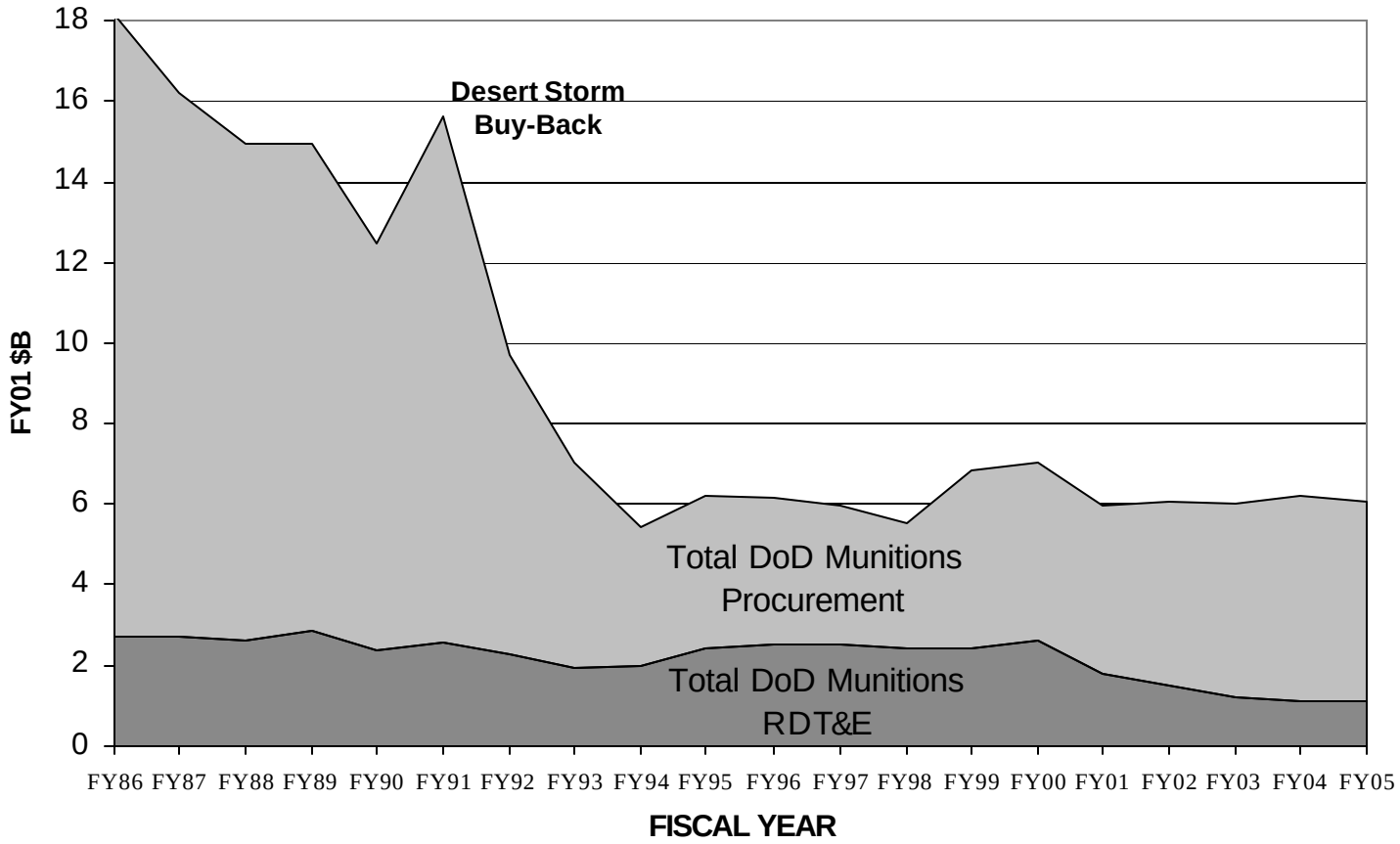
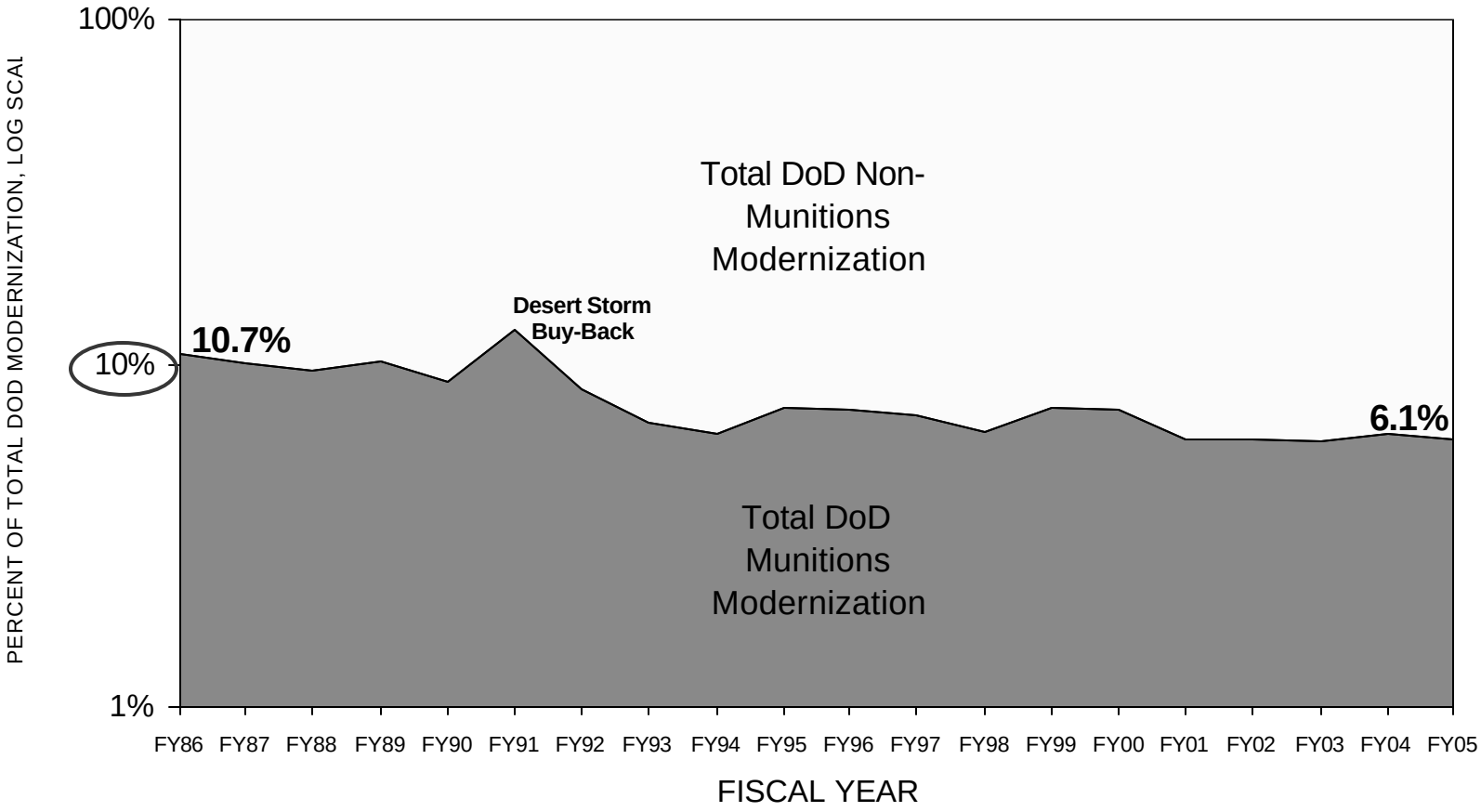
# Outline

- Funding Trends
- APL-A
- Section 806
- PBD 407
- Insensitive Munitions
- Demil and Insensitive Munitions
- Specs/Stds/STANAGS
- Energetics Qualification
- Advanced Energetics
- Submunition Policy

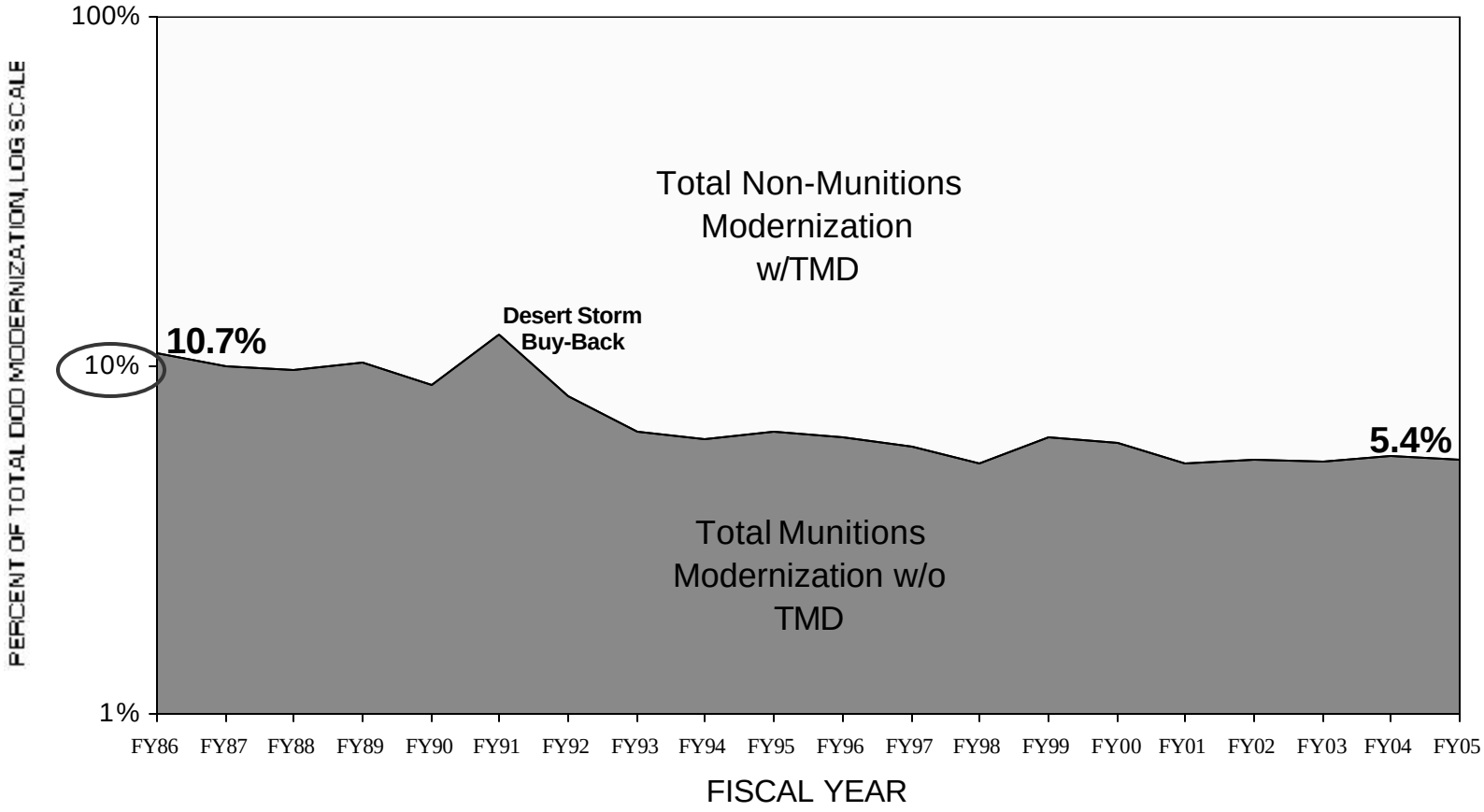
# DoD Munitions RDT&E and Procurement (Stacked Area)



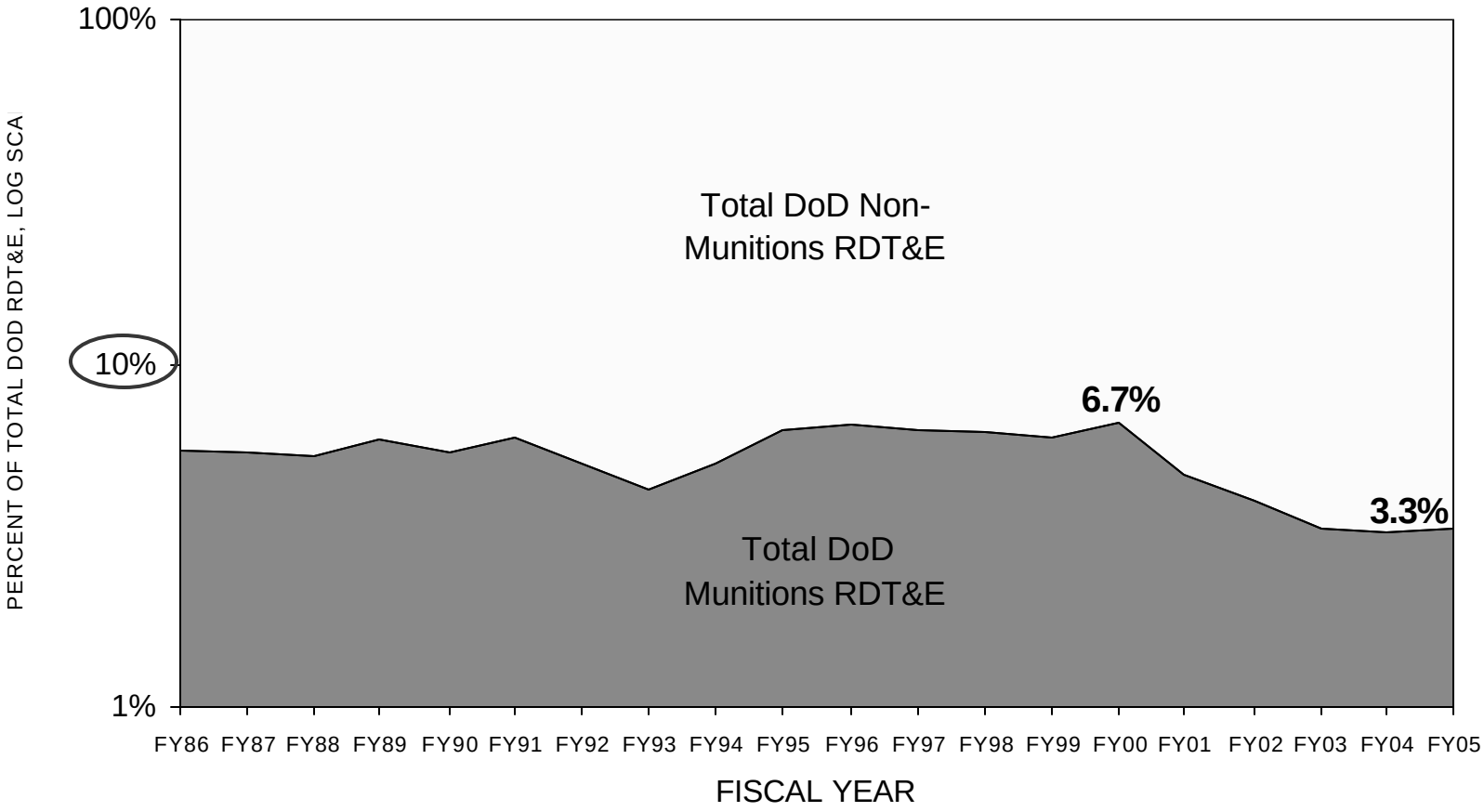
# DoD Munitions Modernization as a Percent of Total DoD Modernization



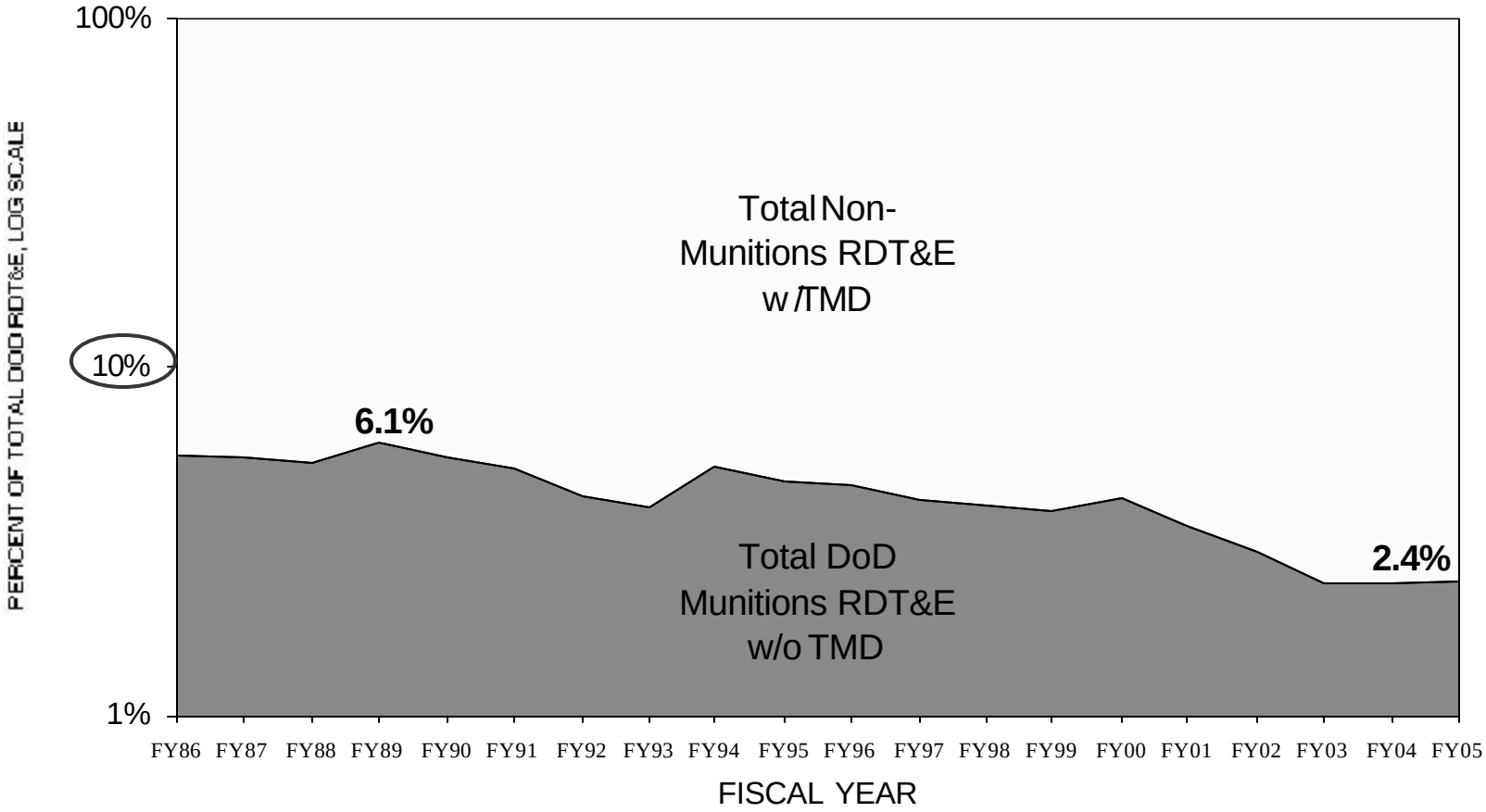
# DoD Munitions Modernization *w/o TMD* as a Percent of Total DoD Modernization



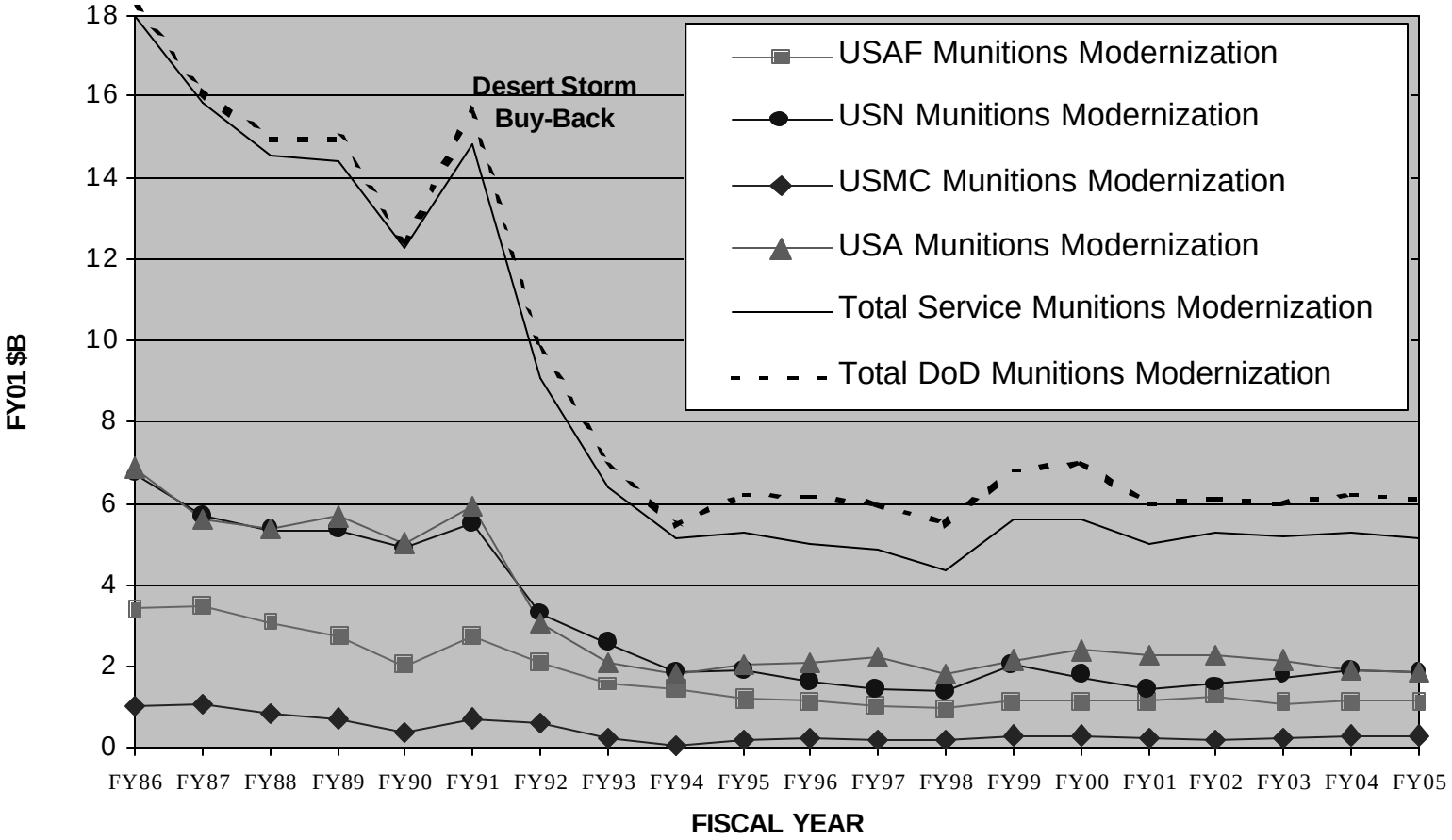
# DoD Munitions RDT&E as a Percent of Total DoD RDT&E



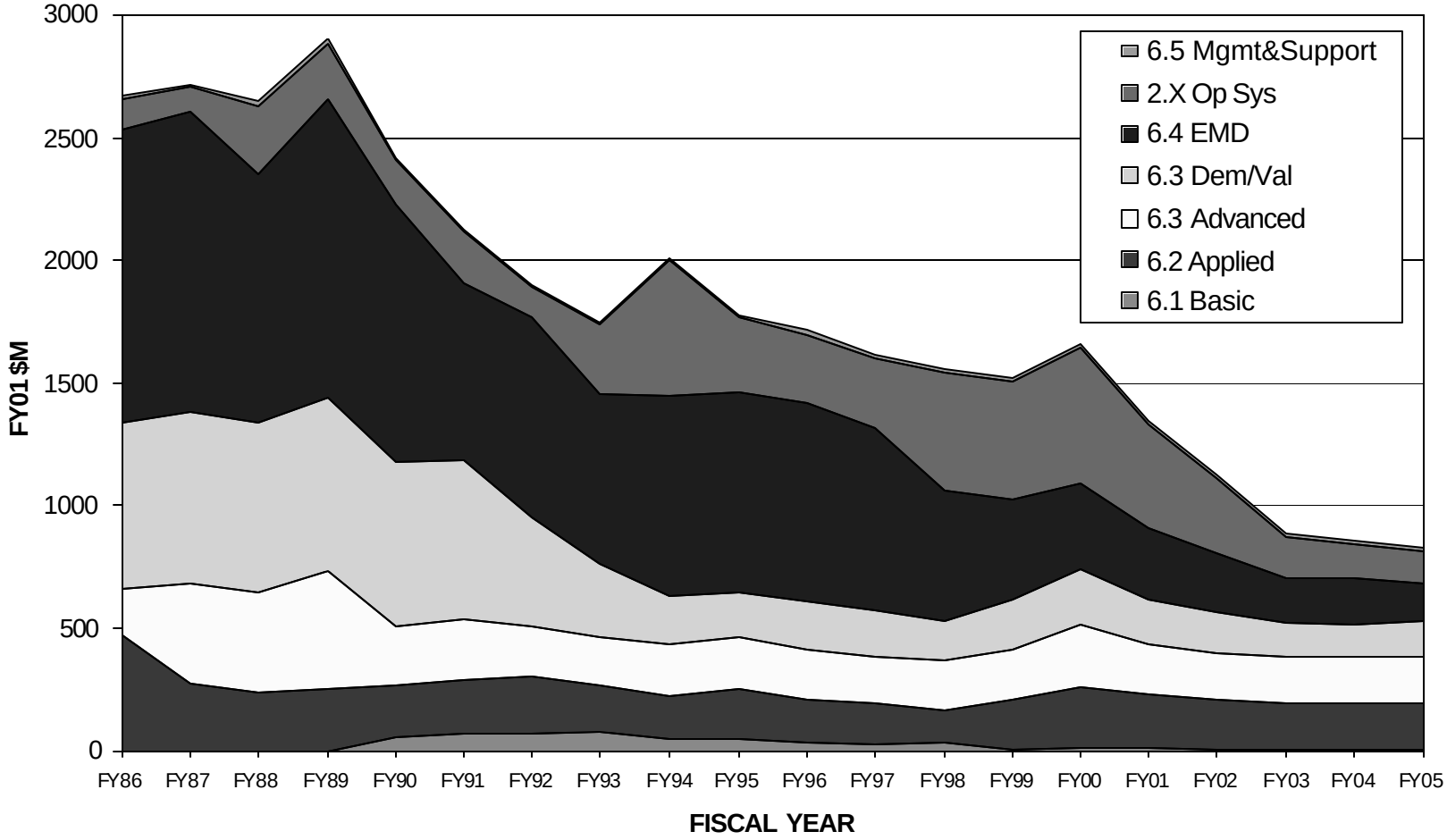
# DoD Munitions RDT&E *w/o TMD* as a Percent of Total DoD RDT&E



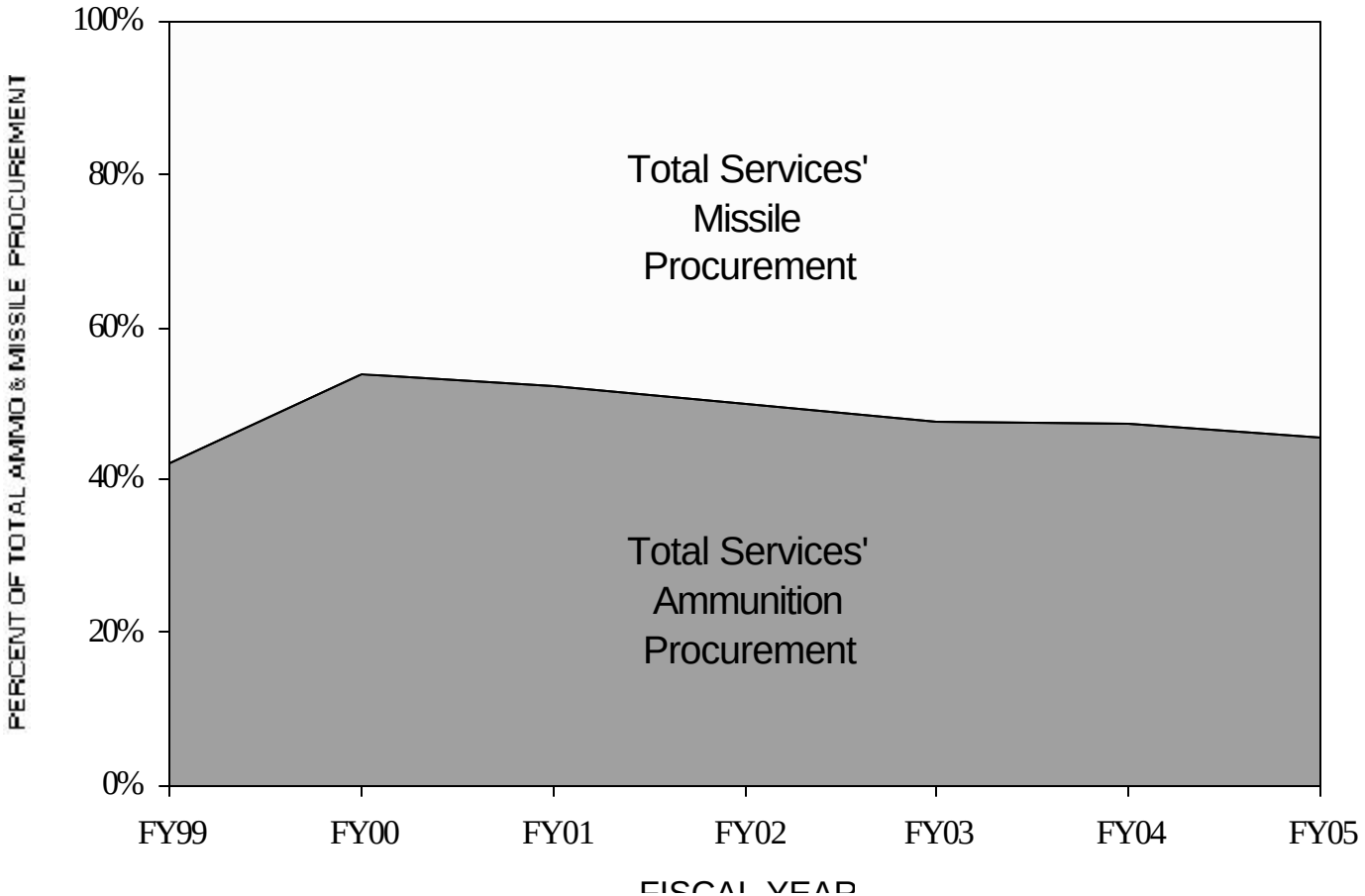
# Service & DoD Munitions Modernization



# Service Munitions RDT&E by Research Category (Stacked Area)



# Service Ammunition & Missile Procurement Proportions



# Anti-Personnel Landmine Alternatives

Very High Visibility Effort

- Presidential Direction
- Senior Department Leadership involved
- Congressional Interest
- NGO campaign

# Current APL-A Policy

- PDD/NSC-64, 23 June 1998 Implications
  - End use of ALL APL outside Korea, by 2003
  - Aggressive search for APL-A's ready for Korea by FY06 (objective)
  - Search aggressively for alternatives to: APL, AP components of mixed systems and mixed systems entirely (militarily advantageous, cost effective, and safe)
  - Retains mixed anti-tank mine systems
- DepSecDef Directive
  - Identify lethal and non-lethal alternatives; provide a range of system activation and target discrimination capabilities
  - Address alternatives that could be developed and fielded in: the near-term (by 2006); the mid-term (2006-2012); and the far-term (beyond 2012).

# Tracks

**Track 1 -** Army: RADAM ($145.3M), 2003 deadline; NSD-A ($507.6M), 2006 objective

**Track 2 -** DARPA: investigate long term solutions to the use of mines

**Track 3 -** OUSD(A&T): Concept Exploration Effort ($256M R&D) to identify alternatives to AP submunition in mixed systems and all mixed systems, emphasis on meeting the 2006 objective. Army lead should follow.

# APL-A Status

**Track 1-** RADAM **-** President Clinton deferred the production decision to the new administration, and the NSD-A program transition to EMD

**Track 2 -** DARPA is investigating a self-healing anti-tank minefield concept. Transition to the Army for full development is expected in 2 years.

**Track 3 -** Concept Exploration effort is on schedule and will end in June.

# Section 806

## FY99 National Defense Authorization Act:

**Authority:** Army's SMCA is authorized to restrict procurement of conventional ammunition to sources within national technology and industrial base (US and Canada).

**Requirement:** SMCA shall limit a specific ammunition procurement in any case that the SMCA determines the limitation is necessary to maintain capability to furnish an essential item in a national emergency or for industrial mobilization.

## Status:

**Policies:** Section 806 does not supersede the Competition in Contracting Act. Competition will be restricted only when the potential loss of an industrial base capability causes unacceptable risk to the DoD. Capability analyses will be accomplished using DoD Handbook 5000.60-H as a guide.

**Procedures:** Department-wide guidelines are in place.

# Program Budget Decision 407

Requires the Army to prepare a report on rightsizing existing ordnance facilities within the Army Working Capital Fund and to determine how they can consolidate operations to reduce unutilized and underutilized capacity.

Phase 1- Completed in July ‘00

- Excess space and equipment at Watervliet and Rock Island
- Modest savings from reducing footprints
- Replenishment requirements process slow, yields variable results, adequate capacity

- Phase 2- Completed in November ‘00
  - Developed potential options for further study: regarding governance and setting--16 ammo plants and arsenals
  - Four options approved for assessment
  - Principles and criteria
  - Defer recommendations and installation-specific options
- Phase 3- TBD

# Insensitive Munitions

**<u>IM Definition</u> (STANAG 4439):** Munitions which reliably fulfill their performance, readiness and operational requirements on demand, but which minimize the probability of inadvertent initiation and severity of subsequent collateral damage to weapon platforms, logistic systems and personnel when subjected to unplanned stimuli.

**<u>DoD IM Policy</u>:**

**DoD Regulation 5000.2-R**: All munitions and weapons, regardless of ACAT, shall conform to IM criteria…The requirements validation process shall determine IM requirements and keep them current throughout the acquisition cycle…Waivers for munitions/weapons, regardless of ACAT, shall require JROC approval…The ultimate objective is to design and field munitions that have no adverse reaction to unplanned stimuli, analogous to Hazard Division 1.6.

# Insensitive Munitions

**CJCSI 3170.01A**: Insensitive Munitions. J-4 will certify that all ORDs for munitions, regardless of ACAT level, contain the requirement to conform with insensitive munitions (unplanned stimuli) criteria. As a minimum, these ORDs will contain the statement "Munitions used in this system will be designed to resist insensitive munitions threats (unplanned stimuli)". Waiver Requests. Insensitive munitions and cross-Service interoperability waiver requests require approval by the JROC. Waiver requests will be submitted to J-4 for review...

**USD(AT&L) Memo of 26 Jan 99:**

- All munitions produced (in the inventory, awaiting acceptance) on or before 26 Jan 99 are exempt from IM requirements.
- All munitions continuing in production or under production contracts signed on or before 26 Jan 99 shall have have IM technology inserted at every feasible window of opportunity.
- All new munitions or munitions being produced under production contracts signed after 26 Jan 99 shall be fully IM-compliant or have an approved IM Waiver.

# Insensitive Munitions Initiative

- DoD IM Integrated Program Team established June 1997
- IM Boards & IM Officials in all Services
- Joint Services IM Technical Panel (JSIMTP)
- IPT Subgroup on Hazard Classification / IM Harmonization
- USAF IM Acquisition Plan for MK Series Bombs
- CAD/PAD Class Certification
- Pursuing similar certification for small arms ($\leq$.50 Cal)
- Predictive Tools (Cook-Off Models)
- FCT on I-RDX
- USAF Hazard Classification Reduction Study

# IM/Reduced Hazard Classification

Benefits of Reduced Hazard Classification of Munitions:

- Potential for increased storage capacity for the existing infrastructure, or, for the same number of munitions, reduced storage cost due to reduced infrastructure requirements.
- Significant reduction in accident cost.
- Significant reduction in loss of operational assets in a single accident event.
- Significant increase in munitions capacity at or near the flight line.
- Significant potential to support more combat aircraft with the existing munitions infrastructure.

# Demil and IM Policy

**Executive Order 13101 -- Greening the Government through Waste Prevention, Recycling,… Consider:**

- elimination of virgin material requirements
- reuse of product
- life-cycle cost
- recyclability
- disposal

**USD(AT&L) , December 2000:**

- view demil stockpile as asset, not liability
- maximize resource recovery and reuse
- recycle energetics & reformulate in less-sensitive fills
- apply to munitions acquisition process

# Specs/Standards/STANAG Policy

**USD(AT&L) , September 2000:**

- Use internationally recognized commercial and/or NATO Standards
- Incorporate into munitions system acquisition programs
- Eliminate U.S. equivalents

# DoD Energetics Qualification

**Issue:** Four Military Services and three approaches to energetics qualification

**Solution:** Develop a single set of Energetics Qualification Requirements and Procedures

**Approach:**

- Develop a comprehensive DoD Energetics Qualification document(s) via a technical workshop
- Take to NATO -- revise STANAG-4170 and AOP-7
- Cancel MIL-STD-1751A and related documents

# National Advanced Energetics Initiative

## Advanced energetic materials are required to succeed in high priority military initiatives

A Net Assessment - Advanced Energetics Workshop (Feb 00)

- Near term technologic opportunities exist for exploitation
- Current efforts not adequate to support current requirements
- Risk of technological surprise great
- Critical skills and infrastructure at risk

High payoff-moderate risk areas identified

- Designer molecules
- Nano-structured materials
- Reactives
- Advanced gun propellants

Status

- Master plan for national advanced energetics initiative under development
- Funding issues

# Submunition Reliability Policy

## Secretary Cohen, January 10, 2001:

**Issue:** Submunition weapons employed in Southwest Asia and Kosovo, and major theater war modeling, have revealed a significant unexploded ordnance (UXO) concern.

**Policy:** To reduce overall UXO through a process of improvement in submunition system reliability-the desire is to field future submunitions with a 99% or higher functioning rate. Submunition functioning rates may be lower under operational conditions due to environmental factors such as terrain and weather.

**Application:** Systems delivered by aircraft, cruise missiles, artillery, mortars, missiles, tanks, rocket launchers, or naval guns that are designed to attack land-based targets and that deploy payloads of submunitions that detonate via target acquisition, impact, or altitude, or self-destruct (or a combination thereof).